

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## PCW\_\_09\_\_22 Coordinate transformations v1

### Question 1

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 3 \cdot f[7(x + 2)] + 6$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a}{7} - 2, 3b + 6 \right)$$

### Question 2

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 2 \cdot (f[6x - 8] - 9)$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a + 8}{6}, 2(b - 9) \right)$$

### Question 3

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = \frac{f\left[\frac{x}{6} - 8\right] - 2}{3}$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( 6(a + 8), \frac{b - 2}{3} \right)$$

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### Question 4

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 8 \cdot (f[5x + 2] + 9)$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a-2}{5}, 8(b+9) \right)$$

### Question 5

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = \frac{f\left[\frac{x}{4} + 3\right] + 8}{7}$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( 4(a-3), \frac{b+8}{7} \right)$$

### Question 6

Consider the two functions  $f$  and  $g$ , where  $g$  is defined as a transformation of  $f$ :

$$g[x] = 8 \cdot f[7(x-5)] - 9$$

For point  $(a, b)$  on curve  $f$  there is a corresponding point on the curve  $g$ . Write the coordinate transformation.

$$(a, b) \rightarrow \left( \frac{a}{7} + 5, 8b - 9 \right)$$